

Amendments to the Specification:

Please replace the paragraph on page 1, lines 3-5, with the following amended paragraph:

This application is ~~based on the~~ claims the benefit of Japanese Patent Application No. 2003-021495 filed on January 30, 2003, the ~~contents entirety of~~ which ~~are~~ is incorporated hereinto by reference.

Please replace paragraph [0004] with the following amended paragraph:

[0004] More specifically explained, after the above- described preliminary treatment, the first step is carried out in which an appropriate amount of dilute sulfuric acid is added to the oil-containing waste water, so that a pH value of the waste water is made not greater than three and a major portion of the oil is separated from the fouling components owing to a decomposing effect of the dilute sulfuric acid. The thus separated major portion of the oil is removed from the waste water. Subsequently, the second step is carried out in which a neutralizer such as sodium hydroxide is added to the waste water from which the major portion of oil has been removed, so as to neutralize the waste water. In addition, aluminum sulphate, PAC, or emulsion breaker is added to the neutralized waste water so as to form fine flocks consisting of the remaining portion of oil dispersed in the waste water and the other fouling components than the oil. Moreover, an appropriate amount of high-molecular flocculant or coagulant is added to the waste water in which the fine flocks have been formed, such that a concentration of the flocculant in the waste water ranges from 10 to 50 mg/L(~~litter~~liter). Thus, the formation of the fine flocks is promoted and the fine flocks are grown into a sludge. The waste water in which the sludge has been formed is subjected to a known floatation separation method in which the sludge is caused to float on the surface of the waste water. This sludge is removed from the waste water. Then, the third step is carried out in which an inorganic adsorbent such as bentonite is added to the waste water and additionally an appropriate amount of high-molecular

flocculant is added to the waste water so that a concentration of the flocculant in the waste water is about 20 mg/L(~~litter~~liter). Thus, the remaining portion of oil and the other fouling components dispersed in the waste water are flocculated or coagulated in a state in which the oil and the other fouling components are adsorbed by the inorganic adsorbent, and accordingly an additional amount of sludge is formed. This sludge is removed by the same method as used in the second step. In this way, the oil-containing waste water is completely separated into the fouling components including oil, and the water. This oil-containing waste water treating method is disclosed in, e.g., JP-A-5-285305.

Please replace paragraph [0005] with the following amended paragraph:

[0005] However, in the above-explained, conventional oil- containing waste water treating method, the oil-containing waste water is treated using the respective sorts of agents and/or chemical compounds in the three steps. Thus, the conventional method is not economical, and is complicated as a whole. In addition, since the three steps use ~~the-respective different treatment-equipments~~ equipment, the overall cost needed to prepare ~~these equipments~~ such equipment is significantly increased, and the footprint needed to dispose all of them is large-scaled. Moreover, in the conventional method, the respective steps produce the oil or the sludge that contains the treating agent and/or chemical compound added to the waste water. Thus, the total amount of oil and sludge produced by the three steps is inevitably increased, and additional cost and labor are needed to treat the increased amount of oil and sludge.

Please replace paragraph [0006] with the following amended paragraph:

[0006] It is therefore an object of the present invention to provide an oil-containing waste water treating method which is for treating an oil-containing waste water produced by cleaning an article, and thereby separating the waste water into one or more fouling components including oil, and water, which can be carried out using a

~~small-sealed~~ small-scale equipment, at a low cost, and in one or more simple steps, and which can advantageously decrease an amount of sludge formed of the fouling components separated from the water and thereby effectively reduce the cost and labor needed to treat the sludge.

Please replace paragraph [0010] with the following amended paragraph:

[0010] In the present method, the specific high-cationic flocculant is just added, in just one step, under the above-indicated condition, to the oil-containing waste water, and consequently substantially all amounts of fouling components including oil are flocculated to form a sludge consisting of flocks of the fouling components. Thus, the oil-containing waste water is completely separated into the fouling components and the water. That is, the present method differs from the conventional method in which respective sorts of agents and/or chemical compounds are sequentially added to an oil- containing waste water so as to stepwise separate the waste water into fouling components including oil, and water. The present method can be carried out using a single treatment equipment to add the specific flocculant to the waste water, and does not need any other equipment. Moreover, since only the single sort of chemical agent is needed to separate the oil-containing waste water into the fouling components and the water, the total amount of sludge consisting of the fouling components separated from the water can be effectively reduced.

Please replace paragraph [0011] with the following amended paragraph:

[0011] Therefore, the present oil-containing waste water treating method can be carried out using equipment which is as small-sized ~~small~~ as possible ~~equipment~~, at a low cost, and in one or more simple steps, and can advantageously decrease the amount of sludge formed of the fouling components separated from the water and thereby effectively reduce the cost and labor needed to treat the sludge. Thus, the present method can more advantageously reduce the economical and

operation-related loads about the treatment of oil-containing waste water, than the conventional method.

Please replace paragraph [0015] with the following amended paragraph:

[0015] An oil-containing waste water to be treated by a method according to the present invention is, for example, one that is discharged from various sorts of machine factories, print factories, food factories, maintenance shops such as automobile maintenance shops, etc., when machines, ~~equipments~~ equipment, etc. that are used there and bear one or more fouling components including mineral oil or vegetable oil, or including not only oil but also dust or mud, are cleaned using water and a surfactant, or one that is discharged from cleaning shops, the above-indicated factories or shops, individual homes, or other sorts of facilities, when laundry that is treated or produced there and bear one or more fouling components including mineral or vegetable oil, or including not only oil but also other fouling components, are cleaned using water and a surfactant.

Please replace paragraph [0016] with the following amended paragraph:

[0016] Thus, the oil-containing waste water is a-polluted water that is produced when an article bearing one or more fouling components including oil is cleaned using water and a surfactant, and accordingly contains the surfactant and the fouling component or components that is or are finely dispersed in the water by the surfactant. The fouling component may be oil only, and the fouling components may include not only oil but also dust or mud. In the case where articles to be cleaned are clothes or the like, an oil-containing waste water produced by cleaning the articles is a-polluted water that contains fibers or the like in addition to the above-indicated fouling component or components. The surfactant used to finely disperse the fouling components in the waste water is not limited to any specific sorts. For example, a commonly used anionic surfactant or a non-ionic surfactant may be used.

Please replace paragraph [0026] with the following amended paragraph:

[0026] More specifically described, the high-cationic flocculant is added, to the oil-containing waste water, in a very large amount that assures that a concentration of the flocculant in the waste water falls in a range of from 100 mg/L (~~litter~~liter) to 1,000 mg/L. If the flocculant is added to the waste water such that the concentration of the flocculant is lower than 100 mg/L, or higher than 1,000 mg/L, that is, if the amount of flocculant added to the waste water is too small or too large, then the flocculant cannot exhibit its fouling-component flocculating effect to a sufficiently satisfactory degree.

Please replace paragraph [0035] with the following amended paragraph:

[0035] The present treating method apparently differs from a conventional treating method in which respective sorts of treatment ~~equipments~~equipment are used to sequentially add respective sorts of chemical agents to an oil-containing waste water so as to stepwise separate the waste water into fouling components including oil, and water. That is, the present method needs only the single sort of treatment equipment and the single sort of chemical agent so as to separate the oil-containing waste water into the fouling components and the water. Thus, the present oil-containing waste water treating method can be advantageously simplified and the cost needed to treat the waste water can be effectively decreased. Moreover, since only the single sort of chemical agent is needed to treat the oil-containing waste water, the amount of the sludge containing the chemical agent can be advantageously reduced.

Please replace paragraph [0041] with the following amended paragraph:

[0041] Then, a non-ionic surfactant is added to a 60 °C water (hot water), and additionally an appropriate amount of sodium metasilicate is added to the water so that a pH value of the water is 10.4. This water is used to clean the above-indicated laundry ~~outputted output~~ from the ~~an~~ automobile factory, and thereby obtain an oil-

containing waste water in which the fouling components including oil and/or dust are finely dispersed in the water by the non-ionic surfactant. Respective measured values of pH and temperature of the thus obtained oil-containing waste water were 10.4 and 32 °C.

Please replace paragraph [0047] with the following amended paragraph:

[0047] Then, a non-ionic surfactant is added to a 60 °C water (hot water), and additionally an appropriate amount of sodium metasilicate is added to the water so that a pH value of the water is equal to 11.9. This water is used to clean the above-indicated laundry ~~outputted-output~~ from the metal working shop, and thereby obtain an oil-containing waste water in which the fouling components including oil, dust and/or mud are finely dispersed in the water by the non-ionic surfactant. Respective measured values of pH and temperature of the thus obtained oil-containing waste water were 11.9 and 35 °C.

Please replace paragraph [0052] with the following amended paragraph:

[0052] <EXAMPLE 3>

First, towels that were used, in a print factory, to wipe off fouling components including oil, such as machine oil consisting of mineral oil, and/or ink; dust; etc., from printing machines or other ~~equipments~~ equipment, are prepared as laundry. In addition, the same high-cationic flocculant as used in EXAMPLE 1 is prepared in an appropriate amount.

Please replace paragraph [0053] with the following amended paragraph:

[0053] Then, a non-ionic surfactant is added to a 60 °C water (hot water), and additionally an appropriate amount of sodium metasilicate is added to the water so that a pH value of the water is equal to 10.6. This water is used to clean the above-

indicated laundry ~~outputted-output~~ from the print factory, and thereby obtain an oil-containing waste water in which the fouling components including oil and/or dust are finely dispersed in the water by the non-ionic surfactant. Respective measured values of pH and temperature of the thus obtained oil-containing waste water were 10.6 and 30 °C.

Please replace paragraph [0055] with the following amended paragraph:

[0055] Next, an appropriate amount of the above-indicated high-cationic flocculant is added to an appropriate amount of the thus obtained oil-containing waste water whose pH value and temperature are 10.6 and 30 °C, such that a concentration of the flocculant in the waste water is 300 mg/L, and then the waste water is agitated. Consequently the fouling components finely dispersed in the waste water are flocculated to form a sludge consisting of flocks of the fouling components. Thus, the oil-containing waste water is separated into the sludge consisting of flocks of the fouling components, and the water.

Please replace paragraph [0056] with the following amended paragraph:

[0056] Then, the sludge is removed from the waste water in which the sludge and the water are separated from each other, in the same manner as used in EXAMPLE 1, and thus a-treated water is obtained. Here, BOD and COD values of the thus obtained treated water from which the sludge has been removed, a concentration of n-hexane-extracted substance in the treated water, and a concentration of suspended substance in the treated water were measured in the same methods as used in EXAMPLE 1. The thus obtained results are also shown in TABLE 3.

Please replace paragraph [0059] with the following amended paragraph:

[0059] Then, a non-ionic surfactant is added to a 60 °C water (hot water), and additionally an appropriate amount of sodium metasilicate is added to the

water so that a pH value of the water is 11.8. This water is used to clean the above-indicated laundry ~~outputted-output~~ from the automobile factory, and thereby obtain an oil-containing waste water in which the fouling components including oil, dust and/or mud are finely dispersed in the water by the non-ionic surfactant. Respective measured values of pH and temperature of the thus obtained oil-containing waste water were 11.8 and 32 °C.

Please replace paragraph [0062] with the following amended paragraph:

[0062] Then, the sludge is removed from the waste water in which the sludge and the water are separated from each other, in the same manner as used in EXAMPLE 1, and thus a-treated water is obtained. Here, BOD and COD values of the thus obtained treated water from which the sludge has been removed, a concentration of n-hexane-extracted substance in the treated water, and a concentration of suspended substance in the treated water were measured in the same methods as used in EXAMPLE 1. The thus obtained results are also shown in TABLE 4.

Please replace paragraph [0065] with the following amended paragraph:

[0065] Then, a non-ionic surfactant is added to a-60 °C water (hot water), and additionally an appropriate amount of sodium metasilicate is added to the water so that a pH value of the water is 10.1. This water is used to clean the above-indicated laundry ~~outputted-output~~ from the metal working shop, and thereby obtain an oil-containing waste water in which the fouling components including oil, dust and/or mud are finely dispersed in the water by the non-ionic surfactant. Respective measured values of pH and temperature of the thus obtained oil-containing waste water were 10.1 and 30 °C.

Please replace paragraph [0077] with the following amended paragraph:

[0077] Then, the same steps as the steps carried out in EXAMPLE 5 are carried out, and the oil-containing waste water is separated into a sludge consisting of flocks of fouling components, and water as a-treated water. Here, BOD and COD values of the treated water, and respective concentrations of n-hexane-extracted substance and suspended substance in the treated water were measured in the same methods as used in EXAMPLE 5. The thus obtained results are also shown in TABLE 7.

Please replace paragraph [0080] with the following amended paragraph:

[0080] The following steps are identical with the steps carried out in EXAMPLE 5, except that an appropriate amount of sodium hydroxide is added to an oil- containing waste water obtained by cleaning the towels, such that a pH value of the waste water is equal to 13.7 that is higher than the upper limit of the range defined according to the present invention. Thus, the oil-containing waste water is separated into a sludge consisting of flocks of fouling components, and water as a treated water.

Please replace paragraph [0084] with the following amended paragraph:

[0084] Then, a non-ionic surfactant is added to a-60 °C water (hot water), and additionally an appropriate amount of sodium metasilicate is added to the water so that a pH value of the water is 10.1. This water is used to clean the above-indicated towels, and thereby obtain an oil-containing waste water in which the fouling components including oil, dust and/or mud are finely dispersed in the water by the non-ionic surfactant. Subsequently, the thus obtained oil-containing waste water is heated so that a temperature of the waste water is equal to 70 °C. A measured value of pH of the thus heated oil-containing waste water was 10.1.